

KERAMIC STUDIO

Vol. V, No. 9

SYRACUSE NEW YORK

January 1904



IN view of the approaching exhibit of the National League of Mineral Painters at St. Louis the exhibition of the New York Society was not a little disappointing. Two or three only have fulfilled the promise of last year. A smaller number than ever before exhibited, and few were striking out on individual lines. Apart, however, from this consideration the work generally was encouraging as it showed, in almost every instance, a striving for better art in design and color. The detailed account of the exhibition will be of necessity postponed until the February number on account of the difficulty in procuring illustrations in time for this issue.

It is hoped that the League work, at least, will make a more impressive showing than that of the individual worker, otherwise all the trouble of having overglaze decoration judged under the art section will have been in vain.

It was also a matter of disappointment that so little pottery was shown. However, the Society is to be congratulated, in that the really talented members are willing to take so much trouble to prepare an exhibit, for the influence it may have on the other workers. Surely that is their only reward, for such work is lost and out of place in a fashionable hotel.

After all, there is no reason for despondency in respect to Ceramic decorative art. When it is considered how few really good pictures are hung at the annual art exhibitions, there is cause for congratulation, that proportionately to the number of exhibitors, the good work is much more in evidence at the New York Society's display.

SPRING COMPETITION

Open to every one—closed March 15, 1904

I. Decorative Study of a Flower subject. First prize \$25.00, second prize \$15.00.

This calls for an arrangement of some flower form in a panel 9 x 12, executed in India ink, wash drawing, flat tones with or without outlines. Special attention is called to the decorative lines of the plant growth, avoiding too much detail, and to an agreeable division of the space. This study must be accompanied by a pen and ink detail drawing of the flower and an application in 2 to 5 colors to some ceramic form other than a plate. Use a smooth water paper for the wash drawing and color scheme and Bristol board for pen and ink work.

II. Design for Child's Set of 3 pieces. First prize \$15.00, second prize \$10.00.

This may be either a bread and milk set of bowl, plate and mug or pitcher, or wash bowl, pitcher and rectangular tray. To be executed in India ink on Bristol board and accompanied by a color scheme of 2 to 5 colors.

III. Design for Tiles for fire-place and hearth in child's room. First prize \$15.00, second prize \$10.00.

This may be either a design fitting the fire-place or a single tile design and border for repeat. To be executed in wash drawing and accompanied by a color scheme in 2 to 5 tones.

IV. Tile design for Teapot or Flower pot stand. First prize \$6.00, second prize \$4.00. To be executed in black and

white and accompanied by a color scheme in 2 to 5 tones.

The jury reserves the right to withdraw any prize for which there is no sufficiently worthy design.

A symbolic treatment of the child subjects is suggested.

No one is excluded from the competition. Non-subscribers, foreigners, former prize winners, are eligible. Mark with fictitious name or sign, same to be on envelope enclosing name and address of competitor. Designs must not be traceable to any existing pattern. All work submitted should be mailed flat. Designs receiving mention will be considered for purchase.

If each design is made separately and not overlapping another, it will be more likely to attract favorable attention. Strive for simplicity and appropriateness of design. Any number of designs can be submitted by one person.

Special attention will be paid to shapes of dishes decorated.

Designs from foreign countries should be sent by mail, not by express. Registering insures perfect safety of mail delivery.



AT the last Advisory Board meeting of the League, the business connected with the St. Louis Exposition was transacted as far as possible in the absence of definite dates. Circumstances require committees for both St. Louis and New York, and Mrs. Ralph Buchanan of St. Louis was elected to act in that place, other members to be added to that committee later.

The present Transportation Committee, Mrs. S. E. Price, Mrs. L. Vance Phillips and Mrs. W. C. Hibler, will act in New York. Mrs. Worth Osgood was made Committee on Cases.

Members will please take notice that there will be two classes of work in the League exhibition, one consisting of work done on the lines of the study course, to be installed in the Liberal Arts Building, and the other of original pieces which must be submitted to the official committee. This exhibition will be installed in the Arts Building. This committee is as follows:

New York—William Couper, John La Farge, Frederick S. Lamb, Louis C. Tiffany, Stanford White, Douglas Volk.

Philadelphia—Herbert E. Everett, Gustav Ketterer, Miss Emily Sartain.

Boston—J. Templeman Coolidge, Mrs. Sarah C. Sears, C. Howard Walker.

Western—Charles Percy Davis.

We are unable as yet to secure dates, but members are urged to hold themselves in readiness as this committee will probably not meet later than February.

IDA A. JOHNSON,
President N. L. M. P.



TREATMENT FOR POPPY DRAWINGS

Sara Wood Safford

THE light poppies may be painted in very tenderly with Carnation, leaving some almost white lights upon the petals. A touch of Violet with the Carnation will make a soft warm grey tone for the shadows. Blood Red and Ruby may be used for the darker flowers for the first painting and in the second working, Carnation may be washed over the dark color to give the brilliant effect.

Use some very fresh greens in the buds and small leaves. Apple Green and Blue Green for the brightest parts, greyed with Violet for lower tones and where a mass of foliage is suggested. Violet Shading Green with a touch of Black will be found a good deep harmonious color.

Use Violet and Black in the centres of Dark Poppies and in the lighter ones, Violet and Dark Green.

If the worker wishes to have white poppies, Violet and Yellow will make a soft grey for shadows, but if pink is used in another flower of same group then use Carnation with Violet in some of the shadow tones.



THE MANUFACTURE OF DELFT

IN the year 1649 the first factories were established for the manufacture of pottery at Delft, in the province of South Holland; followed shortly thereafter by the establishment of other factories in several different cities. The product of these factories received the name of Delft ware and soon found its way over the larger part of Europe; in fact, as early as the year 1667, in the town of Delft alone, there were twenty-eight pottery factories, the number increasing to seventy at the end of the nineteenth century. The productions meeting with the most favorable impression and sale were those in imitation of Chinese and Japanese porcelain.

Nothing in business is more uncertain than the demand for articles of luxury, and during the fluctuations of trade two

young pottery makers of Delft went over to England and introduced the ware in that country; this, in turn, was improved upon by Wedgwood to such an extent that in 1770 he founded an entire manufacturing town—Etruria, in Devonshire.

From that time the manufacturing of pottery was introduced and experimented with in England and Delft ware became more and more forgotten until its manufacture almost ceased. But the ordinary wear and tear of a century caused the original Delft ware to become rather rare, and thus it became a desirable antiquity. This was the cause of a recent revival of the industry, and in 1877 an establishment was once more opened for the manufacture of this ware at Delft. Its success was soon an assured fact. The new productions were fine in form, artistically painted in blue cobalt, after the paintings of the old Dutch masters. The Delft ware regained the old time renown and became again an object of demand, not only in the Netherlands, but abroad.

The example given by Delft has already been followed by Utrecht, Puemerend, Gouda and Makkum, where factories have been established; and the manufacture of sculptured pottery, which flourished at Lemmer in former days, has again been taken up in that city.



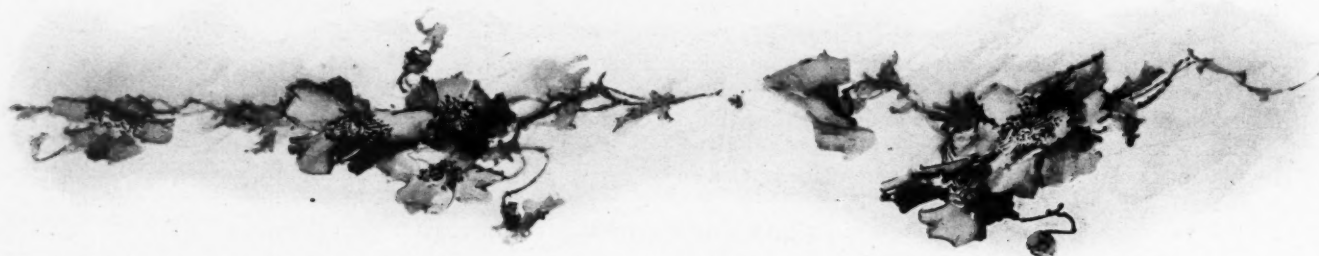
BROOKLYN EXHIBIT

THE annual exhibition of the Brooklyn Society of Mineral Painters took place at the Pouch Gallery, Tuesday and Wednesday, December 1st and 2d. The standard of work shown by this club is higher from year to year, and this exhibition has been no exception.

The value of study and work along definite lines, is evidenced by marked advancement in the work of several members.

Miss Johnson and Mrs. Osgood had an interesting display of pottery made at Ipswich and Alfred, respectively, as well as many charming conventionally decorated pieces.

Many other members showed interesting work but lack of space and illustrations prevents going into detail.





POPPY DESIGN—SARA WOOD SAFFORD

GRAND FEU CERAMICS

VIII.—Kilns

Taxile Doat



KILN is the ceramist's main implement. Neither the ceramic artist nor the professional can do without it. Only amateur potters will be satisfied with using the ordinary kiln, the kiln of somebody else, because they have not the courage to do the work themselves, or because they are ignorant of the construction, or fear the difficulties of handling a kiln.

Without any reservation I will introduce my readers to the details which belong to the successful working of the kiln, but will not speak of all the trials which I had to make in order to solve the numerous technical questions which I long ignored, for, though in the center of the Sèvres establishment, I was confined to decorative work, and paralyzed by the "Everybody in his place" rule of large manufacturing centers.

Kilns, the history of which it is useless to give here, have varied in shape according to the centers of ceramic production: horizontal, semi-cylindrical and with up draft in China; vertical, cylindrical, with up or down draft in Europe; horizontal, square and with up draft in certain parts of Central and Southern France; vertical, cylindrical, some with up draft, some with down draft in the Sèvres factory, which however possesses a square kiln with two fire mouths and down draft.

Whatever the shape, and whatever the country which uses it, a kiln is invariably composed of three parts: the fire mouth, the firing chamber and the chimney for the escape of smoke, flame and of the gases formed by combustion.

All the vertical or cylindrical kilns of Sèvres and most kilns in Limoges and Europe contain two superimposed chambers, simply parted by the vault of the lower one. The upper one is called the baking chamber, and in this chamber the ware is subjected only to an imperfect firing, called hardening or baking. Each chamber of the kiln has its own door.

Grès kilns, which are generally horizontal and square, have no baking chamber. There was none in the kiln used by Carriès. The vertical porcelain kiln of Chaplet and mine have none. The former is with up draft, mine with down draft. The baking chamber is not necessary, but it has the advantage of making possible, with the same fuel and at the same time, a double operation: the grand feu firing of the pieces which are ready for it, and the baking of pieces for the next firing, as in the baking chamber the heat reaches only 830°C., while in the firing chamber it may register 1470°C. or more.

There is no fixed size for kilns. This will vary according to the needs or wishes of the potter. Grès and porcelain can be fired in a kiln having only 32 inches diameter and 28 inches height from the floor to the crown, and with only one fire mouth, as well as in the gigantic industrial constructions measuring inside over 12 feet in height and 15 feet in diameter, and having ten fire mouths all around.

The firing can be done either with coal or wood. If only white porcelain and grès are to be fired, one may use coal, the economy of which is manifest; but if the pieces are decorated, economy is no more an advantage, as the gases from coal are injurious to colors. All trials made so far with coal for grand feu colors have given either bad or comparatively inferior results. I have had a painful experience with this in the kilns of the Parisian suburbs. Orientals, not knowing coal, use wood. Limoges, Germany and England use coal. The three

factories of Copenhagen, Berlin and Sèvres, which make grand feu decorations, fire with wood.

Notwithstanding my first disappointments, when I resolved to do my own firing, I constructed a kiln with fire mouths for coal. From 1879 to 1894 I had my pâtes sur pâtes fired at a large Limoges factory. I used to send them to Limoges, after baking, well packed in sawdust in boxes. But as I knew that I could do better and more, I decided in 1895 to construct my first trial kiln, notwithstanding my limited resources and the consciousness of the difficulties which would assail me. I had to face the following problem, which will also have to be faced by all isolated artists. Having received my experience in the execution of decorative compositions on porcelain, I had to become initiated, at the lowest possible cost, to the technical difficulties of the different processes which belong to the production of grand feu ceramics, and to acquire the necessary skill in each of these processes: turning, modeling, coloring, plaster moulding, glazing, chemistry and firing. To solve this problem, I constructed on rue de Bagneux, in Paris, the small coal kiln of which I will speak (Fig. 31, 32, 33, 34, 35.)

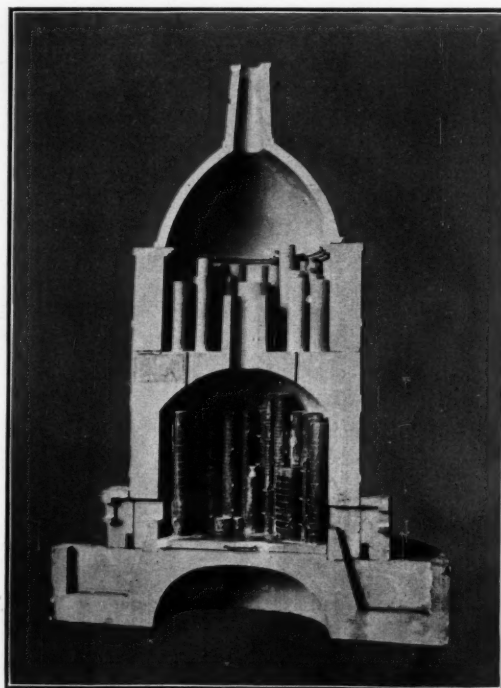


Fig. 76. Plaster model of a porcelain kiln built in 1835—up draft—four fire mouths.

Cylindrical, with vertical axis and up draft, having both firing and baking chambers, and three fire mouths for coal, this kiln was ideal from the standpoints of easy handling, rapid firing, economy in construction and especially in fuel. It was during three years my field of study. By practicing with it, I learned by my own experience, the best of all, to conduct a firing well, to make good saggers, to become familiar with the thousand precautions needful in the placing of a kiln, and with it I decided upon the final adoption of the ceramic bodies which I use to-day.

With the plans, sections and dimensions which I give*, anybody who wishes to obtain the results which this kiln gave me, and to spare, not time or labor, but money, will find it easy to build. Artists in better circumstances will probably prefer to do without this trial construction.

*We reproduce the cuts such as they were sent by Mr. Doat with French terms and measures. The measures are in metres and decimal fractions of metres, which can be easily converted into inches, one meter being equal to 39.37 inches.

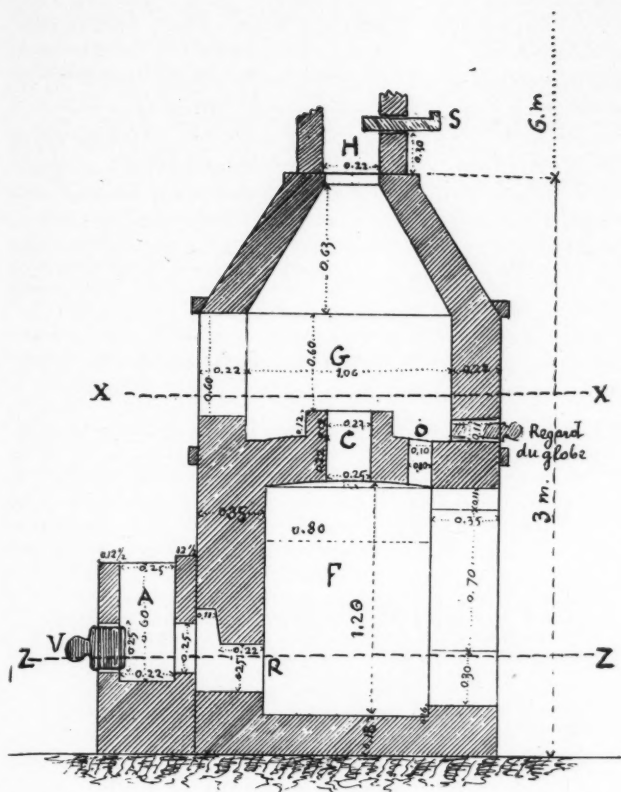


fig. 31

Four à la houille

Four, kiln. Houille, coal. Regard, spyhole. Ferrures, iron braces. Largeur, width. Epaisseur, thickness.

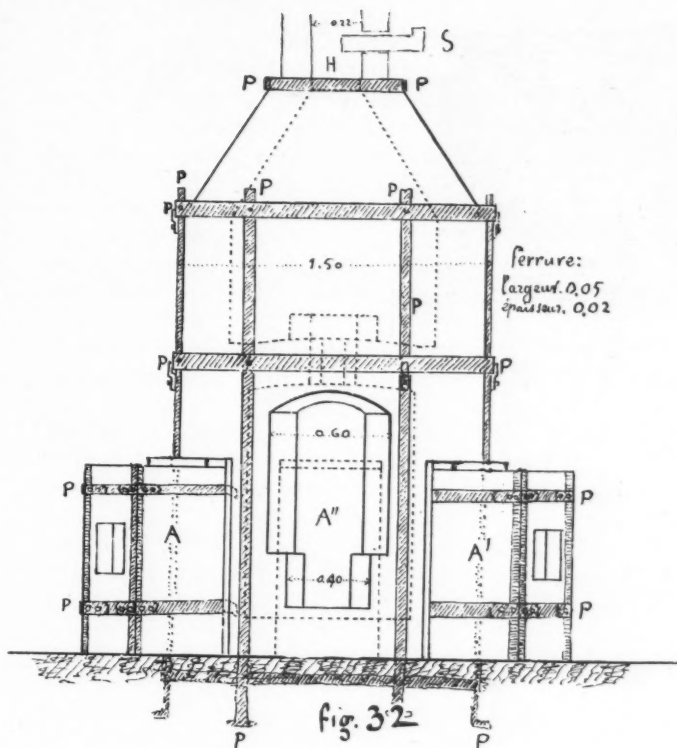
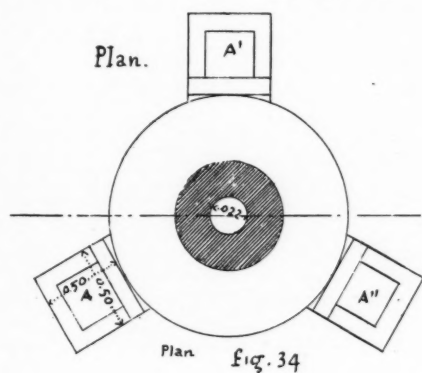


fig. 32

Four à la houille.



Plan. fig. 34

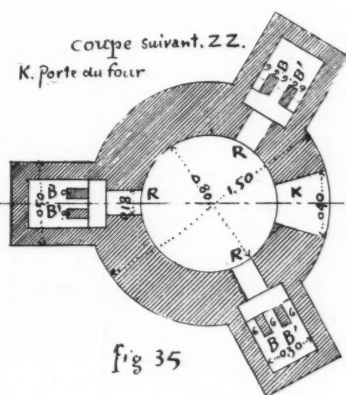


fig. 35

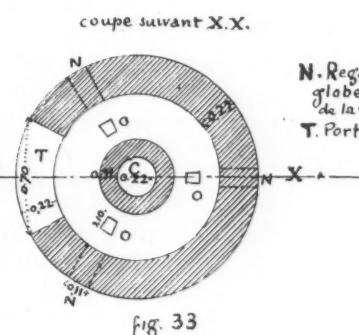


fig. 33

Coupe, section. Porte, door. Voute, vault. Globe, baking chamber.

The firing chamber F ends in a spherical vault pierced by square openings (Fig. 31 and 33), and a central chimney, through which the lower chamber, where the firing of porcelain is done, communicates with the upper chamber G, where the baking is done. This upper chamber is surmounted by a cone ending in a rectangular or cylindrical flue H placed in the axis of the draft, to allow the escape of the products of combustion; it is the chimney.

At the bottom of the firing chamber are symmetrically placed the three fire mouths A, A', A'' (Fig. 34). In R (Fig. 31 and 35) are the openings through which the flame enters the kiln. The relation between the surface of these openings and that of the openings O and C for the entrance into the baking chamber, is 3 to 1 according to the rule.

The progress of the firing is watched through only one spyhole in the door of the firing chamber, made about at two-thirds of the height of the door. This spyhole is roughly made

by four rectangular tiles (Fig. 36 and 37). It is closed with a stopper (Fig. 38) in fire brick, in the axis of which a hole has

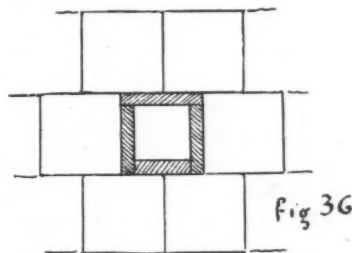


fig. 36

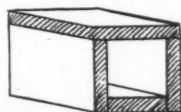


fig. 37

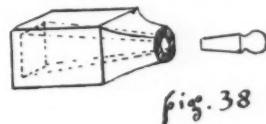


fig. 38

been made which is itself closed with a round piece of glass or a small biscuit stopper.

The firing chamber is 4 feet high from the floor to the crown, and 32 inches in diameter, which makes it of easy access to the placer. It can contain three piles of saggars (Fig. 39 and 40) having $13\frac{1}{2}$ inches outside and $11\frac{1}{2}$ inches inside diameter. Twenty medium size pieces or fifty small ones in porcelain or grès can be fired in this kiln. Plaques 24 inches in diameter are easily placed in it, and three pieces 24 inches wide and 14 inches high can be fired one above the other.

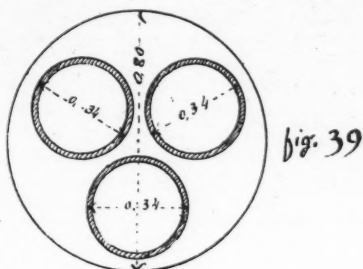


fig. 39

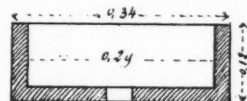


fig. 40

I used to burn from 500 to 600 lbs. of Grimsby (England) coal, at a cost of about \$10 a ton delivered. A firing then used to cost me about \$3 in fuel, and as I did all the work myself, the total expense of the firing was not over \$6, and the results in white, biscuit, bas reliefs Wedgwood style, etc. could be worth as much as \$600.

The Grimsby coal, free from slag and with its long flame, is an ideal coal, because of all European coals, it is the one which resembles wood the most closely. It is sold in blocks or in small nuts. The white ashes of the 600 lbs. burnt could be held in the hollow of my hand.

The construction of that kiln cost me about \$200 (1000 francs, being exactly fr. 438.60 for labor, fr. 444 for material and fr. 105 for iron braces.) The inside walls and the fire mouths in direct contact with the flame, were in fire bricks of the English brand Carr, the balance in fire bricks of the French brand J. The advantage of this combination was an economy, but it was offset by the lack of homogeneity in construction, the two bricks of different brands being of different size and thickness. If it were to be built over, it should be made entirely either of Carr bricks or of bricks of the French brand J B, which are sold by Mr. Boucher, rue Troyon, Sèvres (Seine et Oise). This hard brick is easily handled and behaves well in the firing. It is the brand adopted by Sèvres and by most porcelain manufacturers of France.

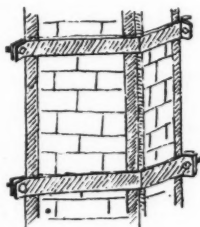


fig. 44

The iron braces P consisted of supports $1\frac{1}{2}$ inch wide and $\frac{3}{4}$ of an inch thick, and of bands $1\frac{1}{2}$ inch wide and $\frac{3}{8}$ of an inch thick. But I found this bracing rather weak and it should be strengthened.

The outside height of the kiln, from the floor to the crown was 9 feet 10 inches and the chimney measured from the crown of the kiln 19 feet 8 inches. This chimney was braced in the angles, at every three feet, with iron bands bolted together (Fig. 44). The damper S (Fig. 31) was about 12 inches from the lower part of the chimney.

The Grimsby coal was used both in blocks and nuts. During my first experiments I had tried Cardiff coal, but it crumbled to pieces in the fire mouth, thus choking it too easily. The Grimsby remains in block while burning, which allows a free circulation of air and an active draft.

A firing lasted about 18 hours with a gradual increase of heat and feeding of fuel. The *slow firing* during the first four hours was obtained by feeding every half hour a block of coal about 6 x 6 inches. Then came the *active firing* lasting four hours more, when a block of coal was fed every twenty minutes until the fire mouth was full. At that time I commenced the *demi grand feu*, lasting five hours, during which I used only nuts fed every fifteen minutes with a hand shovel. During the last five hours I made the *grand feu* firing, keeping the fire mouths full of nuts and blocks, fed alternately, so as to avoid choking.

The spyhole, placed at two thirds of the height of the door, made it possible to observe and follow the progress of the firing, by watching the Seger cones. I stopped at the bending down of cone 10.

To make these explanations more easily understood, I reproduce (Fig. 45 and 46) the records of two fine coal firings.

It will be noticed that the changes in the opening and closing of the fire mouths are just the opposite of changes in the chimney damper, when oxidising or reducing firings are needed. But I will treat this point fully in the article on firing.

The peculiar feature of this coal kiln is that it has no iron grate, the two little bricks BB' (Fig. 35) being used to hold the fuel. When the fire mouth gets choked, one may wait until the fuel is consumed or one may bring about the circulation of air with a poker, which is introduced in the fire mouth not through the top opening, but horizontally through the stopper V (Fig. 31). Anyway, if properly handled, the alternate feeding of nuts and blocks prevents choking, and the two bricks which are at the opening of the fire mouth into the firing chamber, prevent the fuel from falling into the kiln.

It is important while the firing lasts, not to go to sleep, and, should this happen, not to try to catch up by increasing the feeding of fuel. The results would be disastrous. A kiln is regulated like a lamp, which can be moderated or pushed at will.*

TO BE CONTINUED.



KAISER'S CERAMICS AT MACY'S

CERAMIC art as exhibited at Macy's great store has caused considerable interest in the products of the Royal Berlin Porcelain Works. The specimens are in the majority reproductions of the original vases and other articles in porcelain which have been presented by the Kaiser and Kaiserin to distinguished men in their military and diplomatic service, and friends of the royalty.

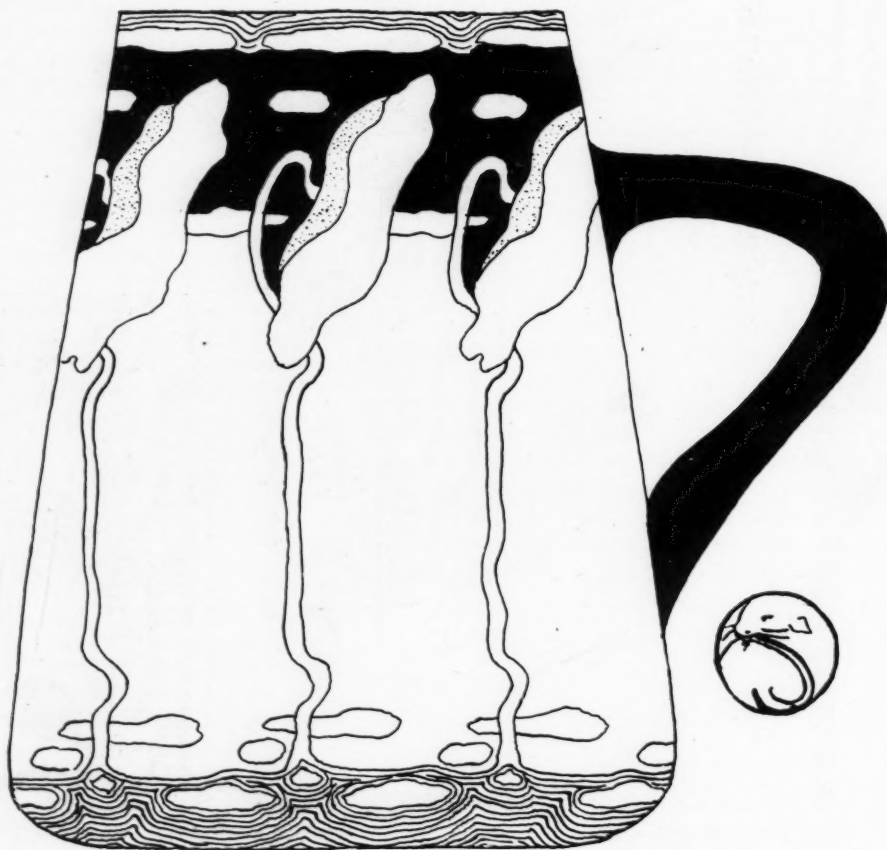
The porcelain factory in Berlin, was founded in 1750 by Wegely. In 1763 the establishment was bought by Frederick the Great, and later passed as an estate into the royal possession. To reach the pinnacle of perfection in Ceramic art the Kaiser has paid considerable attention and unlimited money.

*Lack of room and the number of illustrations prevent us from giving Mr. Doat's article in full. The second part, on kilns with fire mouths for wood, will appear in February issue.



BORDER DESIGN FOR PUNCH BOWL—MARGARET OVERBECK

Ground, pearl grey, birds, grey green and grey blue, band greyish violet and flowers a pale pink with yellow in centers, stem grey green and upper rim pearl grey, outlines in gold.



LILY LEAF DESIGN—ALICE WITTE SLOAN

Black portion of background Dark Blue. Water lines under leaves and at base of mug may be traced in Dark Blue or laid in solid in a lighter shade of Blue. Stems and leaves Green outlined in Dark Blue. Dotted portions Red. White spots and rim bands, Gold.



SECOND PRIZE COMPETITION

ALICE JOSLYN

To be executed in yellow green outlined
with gold.

KERAMIC STUDIO

TREATMENT FOR WILD CARROT PANEL

M. M. Mason

AFTER a careful sketch of the flower forms, begin the painting by laying in the background with Royal Blue, Blue Green and perhaps a little Black, shading this into Copenhagen Gray, then to Ivory around the principal flowers. Continue the background with Gray Green, Shading Green, Dark Green and Black Green, introducing the blue of the upper background into the distant flowers.

While the background is still open paint in the flowers with Gray Green and Copenhagen Gray and with the background color which surrounds them.

When quite dry dust with the same colors used in the painting, carrying the Copenhagen Gray softly over some of the lower toned flowers, allowing them to fade into the background when in shadow and wiping out a few crisp lights in their brightest parts.

About the same palette is used in retouching with the addition of Albert Yellow and Russian Green in the background. The Violet in the background is slightly exaggerated and it would be better to keep it grayer.



TREATMENT FOR STRIPED BASS

Sara N. Warren

DRAW the fish carefully, and if the design is used for a vase, move the two small fishes more to the right and spread the sea weeds around the back of the vase. Wash the fish over with a tint of Carnation very softly shaded into the white china, leaving the belly white. Draw a grey line to define the form, and let the blue or grey water in the background accent the fish and make a strong contrast.

The back of the fish is quite a dark brown green, the body being a soft grey with stripes of Brown Green. Stipple the green, grey, and tint together, then paint in the dark green stripes. The head is yellow and brown green, the eyes yellow brown with dark brown pupils, and hair brown markings about them. The fins are pink used delicately, shaded with Brown Pink (or Violet of Iron) near the backs, light near the body. Inside the mouth Pink; gills, Light Yellow Brown. Seaweeds, Grey shaded into the background at the back of the fish, Carnation and Violet of Iron in the front groups with green ones back of the pink seaweeds. The background Pale Blue at top, Apple Green and Grey, lines across the fish wiped out.

Starfish Yellow; mussel shell, Black and Dark Blue; light inside.

For second firing use the same colors, using a wash of Shading Green over the large fish on the back. Keep the smallest fish very grey.



CLUB NOTE

THE Springfield Ceramic Club held its annual exhibit the first week in December. There was a general improvement in designs, the club having studied this year with Mr. Daniels, Art Instructor in the public schools. The exhibit of Miss Elizabeth Day and Miss Marianna Heath were perhaps the most remarkable though several others had attractive exhibits.



WILD CARROT PANEL—M. M. MASON

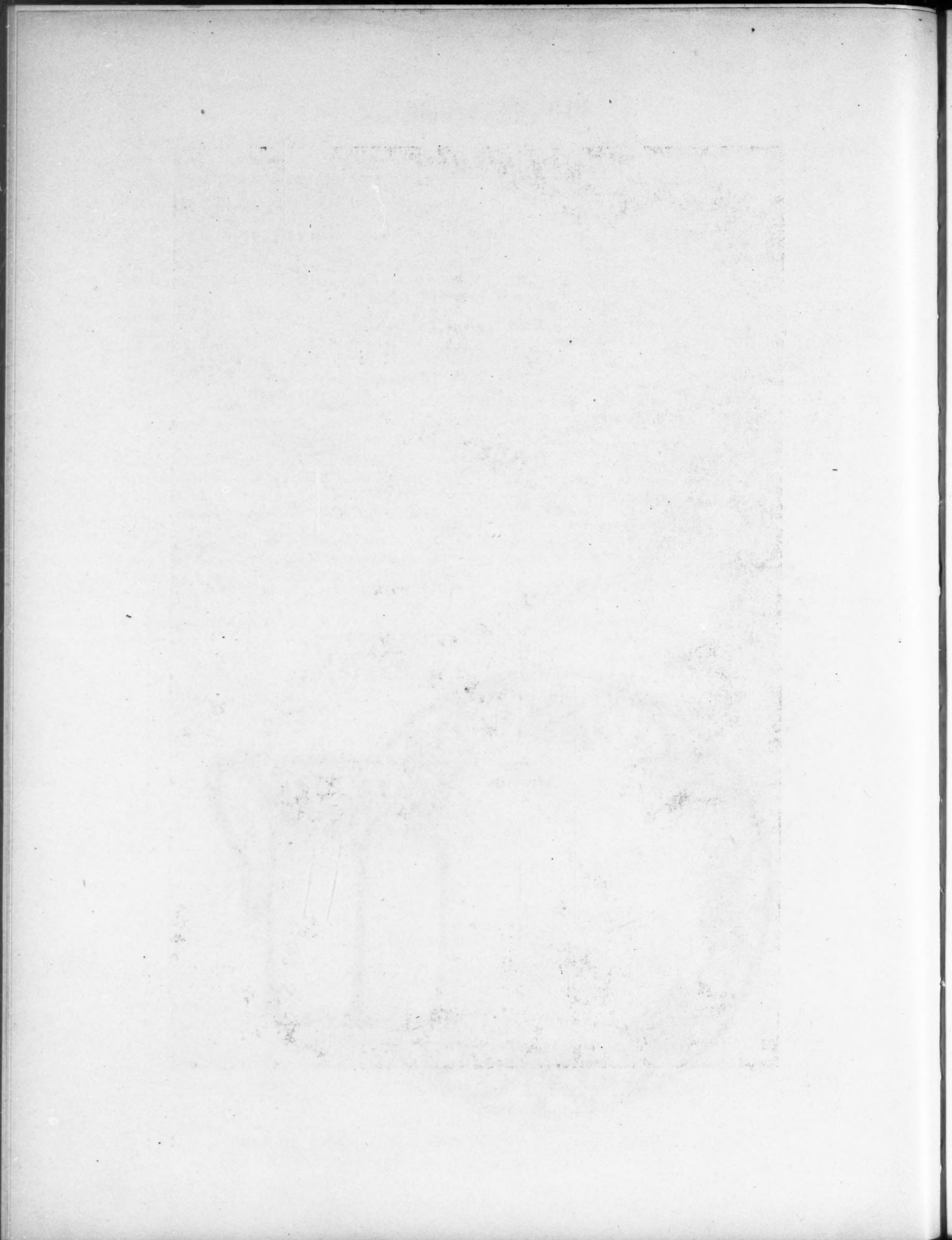


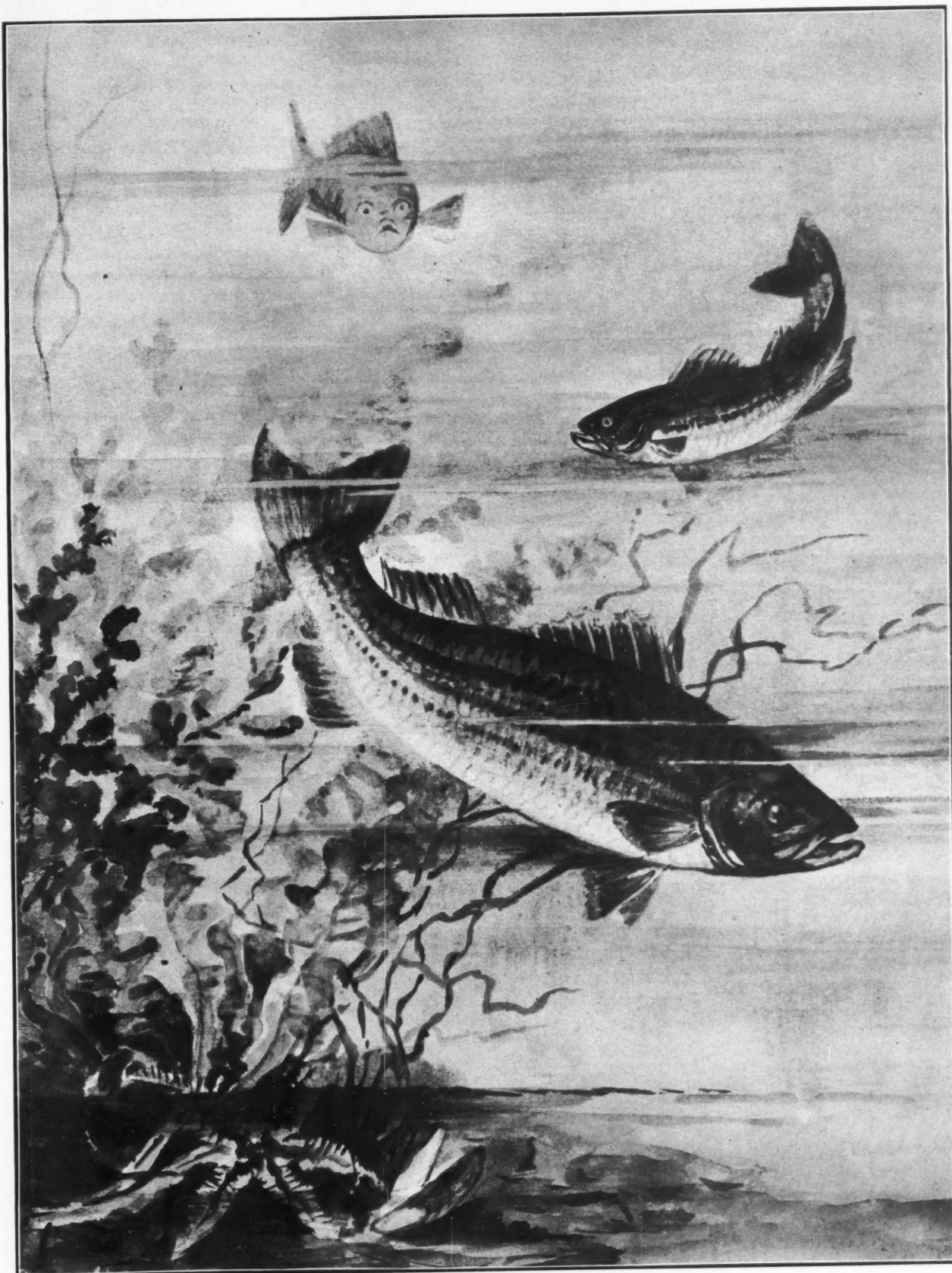
WILD CARROTS—MAUD M. MASON

JANUARY, 1904
SUPPLEMENT TO
KERAMIC STUDIO

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SYRACUSE, N. Y.





STRIPED BASS—SARA N. WARREN

CLAY IN THE STUDIO

(Twelfth Paper.)

Charles F. Binns



O doubt anxious and progressive artist potters have been looking forward to instructions for preparing the coveted "matt" glazes and the time seems now to have arrived when these may be given. A word of caution must, however, be spoken at the outset, for those who have successfully produced bright glazes must not expect the same easy victory over the matt. Let not this be understood to mean that bright glazes are necessarily easy. A simple bright glaze, of a sort, presents no difficulty, but in order to produce really fine and brilliant glazes, free from the long catalogue of defects spoken of in the last paper, much knowledge and perseverance are necessary. No glaze making can, as a matter of fact, be perfect without assiduous application and considerable scientific knowledge. As stated two months ago that knowledge will not be presumed in these instructions. It is thought best to place the matter on such a footing that even the beginner can hope for success, but it must be repeated that failure to reach one's ideal must not discourage, there are very few even among experienced and scientific workers who realize all they want.

Matt glazes are so constructed that the surface, on burning, assumes a tender, silky texture, not dead like biscuit ware, nor scummy like half-burned glaze, but of a quality like the shell of a duck egg. This texture is a matter of the chemical constitution of the glaze but it is largely influenced by many secondary considerations. Matt glazes as compared with bright are harder to prepare, harder to apply and harder to burn.

Presuming the heat of the kiln to be cone 1, or a little more, a matt glaze can be made from the following mixture:

White lead	35
Whiting	10
Feldspar	37
Zinc oxide	3
Kaolin	13
Flint	2

100

The materials are to be weighed out and blended as described for bright glazes and the ware may be prepared for dipping. To secure the best results matt glazes must be laid on in a very thick coat but if enough glaze cannot be got to adhere the first time the piece should be burned and re-dipped. An attempt to add a second coat when the first is only dried will surely end in disaster. The glaze must be used very thick, so thick that it will only flow sluggishly from the hands. It is an advantage to mix some mucilage with the glaze, starch paste or dextrine or gum will answer, the object being two fold (1) to secure an even flow and (2) to enable one to handle the piece when dry.

The pottery to be dipped must be rendered non-absorbent by soaking and be thoroughly dried off. The inside of the piece is first filled and well shaken out and then the attention can be devoted to the outer surface. Everything should be placed in readiness for drying the ware for no touch can be allowed after dipping until quite dry. A thick coating is poured on with the hand and the piece shaken lightly with a circular motion so as to distribute the glaze evenly without losing much.

The beginner's mind must be made up to endure disappointments. Time and time again it will be found that the dipping has been unsuccessful. The glaze is streaky or lumpy or has gathered more thickly here than there. Fortunately, however, these troubles can usually be detected before burning. If so it is better and cheaper to wash the glaze off and begin again. The material need not be lost. If washed into a clean basin it will settle down and can be collected and returned to the batch. It must be remembered that the fire has but little power over matt glazes and the glazes themselves little mobility. In bright glazes a scratch or a patch is of small importance, the glaze will flow and heal the defects. Not so in the matt. As this goes to the kiln so it will come forth. Every finger mark, every inequality will remain and will show up in all its crudity, many more, in fact, than were suspected. The burning of the glaze will surely reveal errors which were before unseen. The remedy is practice, practice and yet again practice!

Grudge not the glaze material. Wash off and redip again and again if necessary, not resting satisfied until a smooth even coating can be secured and the fingers removed without leaving a mark.

One of the chief troubles arising in the glaze is that it is prone to crack in drying. The thicker the body of glaze the worse this is apt to be. There are several remedies, sometimes one will suffice, sometimes more than one must be tried. An increase of mucilage will prove helpful but renders the glaze bad to keep. In fact in all mixtures with mucilage it is best to add a few drops of carbolic acid or some other germicide. This will keep the glaze sweet. Another remedy is to burn the kaolin before adding it to the glaze. This is not easy in the absence of a mill, for the particles of clay become hard on burning and need to be ground. The trouble may, however, be overcome by reducing the kaolin to a very fine powder before burning it. If this is done and the substance sifted through a fine sieve it can be carefully placed in a biscuit cup or crucible without being packed down and it will retain its fine grain in the burning. It can then be easily crushed in a mortar by hand. If the glaze is inclined to dust off on the fingers it may be well to use ball-clay instead of kaolin. This clay has greater binding power and will help to hold the glaze together. Still another expedient is the addition of a little soluble salt, washing soda or saltpeter, to the glaze. A pinch is enough, it will not hurt the glaze but will aid in binding it.

The faults arising in matt glazes are somewhat different from those found in bright glazes. Crazeing does not seriously trouble because it is scarcely visible when it occurs and, the pieces being mostly ornamental in character, does not amount to a hygienic defect. Shivering, on the other hand, is common upon some clays. The body given in these papers does not shiver with these glazes but many natural clays will do so. If the glaze be laid thickly on a thick piece of ware the fault shows in the pulling out of pieces from the edge or along any embossed portion. On thin ware the result is the fracture, often with almost explosive force, of the entire piece. No remedy is possible except to change the clay.

It is sometimes found that the surface of a matt glaze will be filled with small holes, even approaching to a spongy appearance. This is due either to a lack of heat in the kiln or to the fire not being kept clear. Any approach to a "reducing" flame will cause this phenomena and the remedy is, of course, to be sure that the fire be completely oxydising.

The composition of a matt glaze has a great influence, not only upon the point of fire at which the glaze assumes its perfect texture, commonly called the point of maturity, but upon

the action of the chromogens or coloring agents used. The glaze given above is quite suitable for making a certain class of greens but will not work for every color. Another glaze for the same heat but different color effect is as follows:

White lead	50
Feldspar	32
Barium carbonate	12
Kaolin	5
Flint	1
	—
	100

The Barium carbonate used should be the "precipitated" form. There is a natural mineral named "Witherite" which is very pure but is hard to grind sufficiently fine for glaze work.

With these two glazes considerable work can be done, in fact, at the temperature given no other white glaze will be necessary and the coloring agents can be added to either glaze according to the effect desired. The white glaze should, however, be tried and proved before taking time and trouble with colors.

This remark will, probably, call forth some exclamation of surprise for it will naturally be expected that in these papers only those mixtures which have already been tried and proved will be advocated. Let it be understood therefore that these mixtures in the kilns and under the treatment given at Alfred have been found perfectly satisfactory, but this is by no means equivalent to saying that they will be equally satisfactory elsewhere. No two manipulators work in just the same manner, no two kilns fire just alike and for these reasons it is not possible to put forth an infallible recipe. All that can be said is "I have done good work with this." Let no one be discouraged, therefore, if immediate results are not obtained. The art of the

potter is the most troublesome as well as the most fascinating of all the arts and for that reason, perhaps, the best worth mastering.

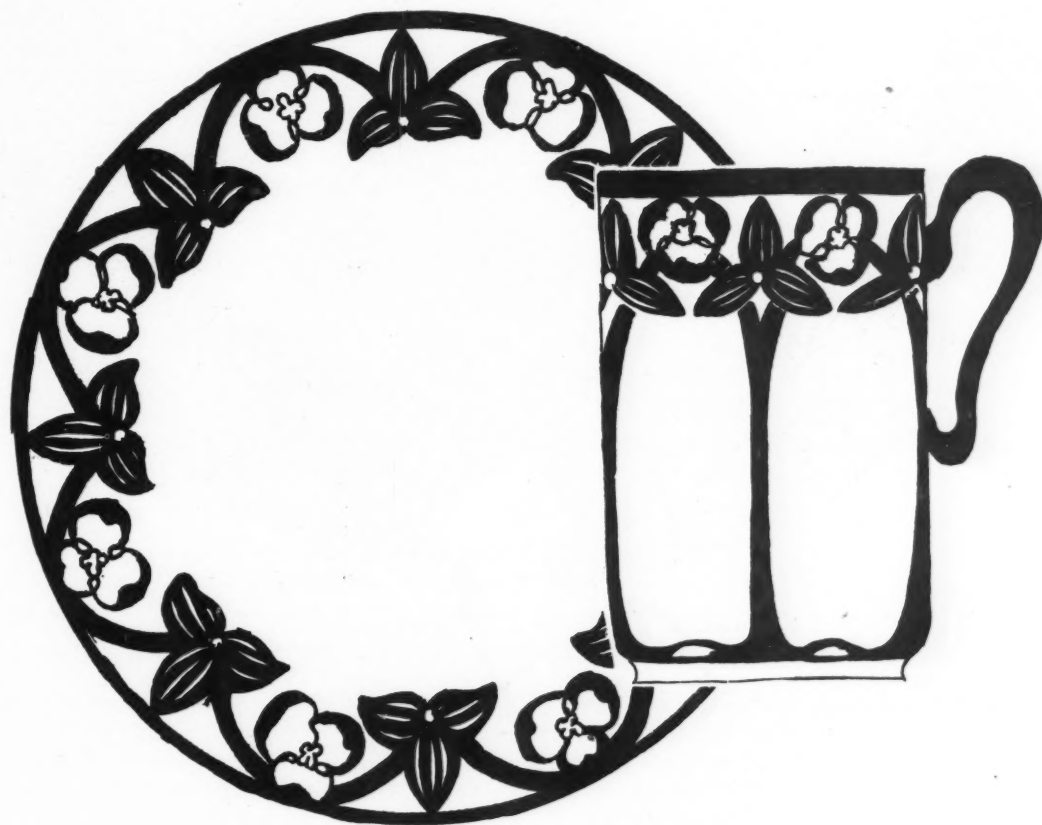
If a given mixture does not behave just as it is expected to, the door is open for a few experiments. One or another of the materials may be increased or decreased in the mixture, taking care to make accurate notes and to observe closely. The fire may be changed, made longer, or shorter, more air to the fuel or a less abundant supply of fuel. There are many ways in which a patient and intelligent worker can influence the results.

Then having secured a white glaze which will meet all requirements a goodly batch of the same should be mixed and ground. Not more than can be manipulated at one time should be weighed, but two or three such weighings can be prepared and then mixed together. When dried and carefully put away in jars, this stock (without mucilage) will keep for ever and can be drawn upon as needed.

In most cases the color can be added to those glazes, but in a few instances it is best to grind glaze and color together.

For a simple green add to glaze No. 1 three parts black oxide of copper. The method of adding this colorant is important and this is how it is done:

A glass slab and muller are almost indispensable here. The small one used for grinding colors will serve at a pinch but is usually too small for glaze work. If possible a sheet of plate glass about 20 or 22 inches square should be procured and this should be set in a wooden frame which lies flush with the glass, that is there is no raised edge. A muller weighing some two pounds or more is about the right size and with a little practice good work can be done with it. To make the



DESIGN TO BE EXECUTED IN BLUE OR GREEN—KATHERINE SINCLAIR

green then three grams of copper oxide are weighed out and transferred to the glass slab. A few drops of water are added and the oxide ground to a fine paste with the muller. Now for the glaze. Ninety-seven grams of glaze weighed out will complete the hundred but this should not all be added to the copper at once. Little by little, with the addition of enough water to allow free motion, the glaze is placed on the glass, each portion being incorporated with the previous one until the whole is a light gray fluid mass. If one has to work by hand it is only by such precautions as these that a perfect

mixture can be secured. On a large scale the mill does the work.

* *

General Palmer of Colorado Springs and Mrs. Bellamy Storer, the founder of the Rookwood Pottery, have formed a plan to utilize the clays, minerals and gems of the State of Colorado and to make Colorado Springs a manufacturing center for arts and crafts of an Oriental type.



WILD STRAWBERRY DESIGN FOR JELLY JAR PLATE—JEANNE M. STEWART

DRESDEN Yellow Red and Pompadour 23, may be mixed, equal parts, for the brightest tones in these little berries, and the Pompadour alone for the dark. Many of the berries, especially the smaller ones, may be painted in the greens and yellows, representing unripe fruit. The seeds should not be made too prominent and a little high light taken out above the seed will tend to make the berries appear more luscious.

Yellow, Turquoise, Olive, Brown and Shading Greens are used in the leaves.

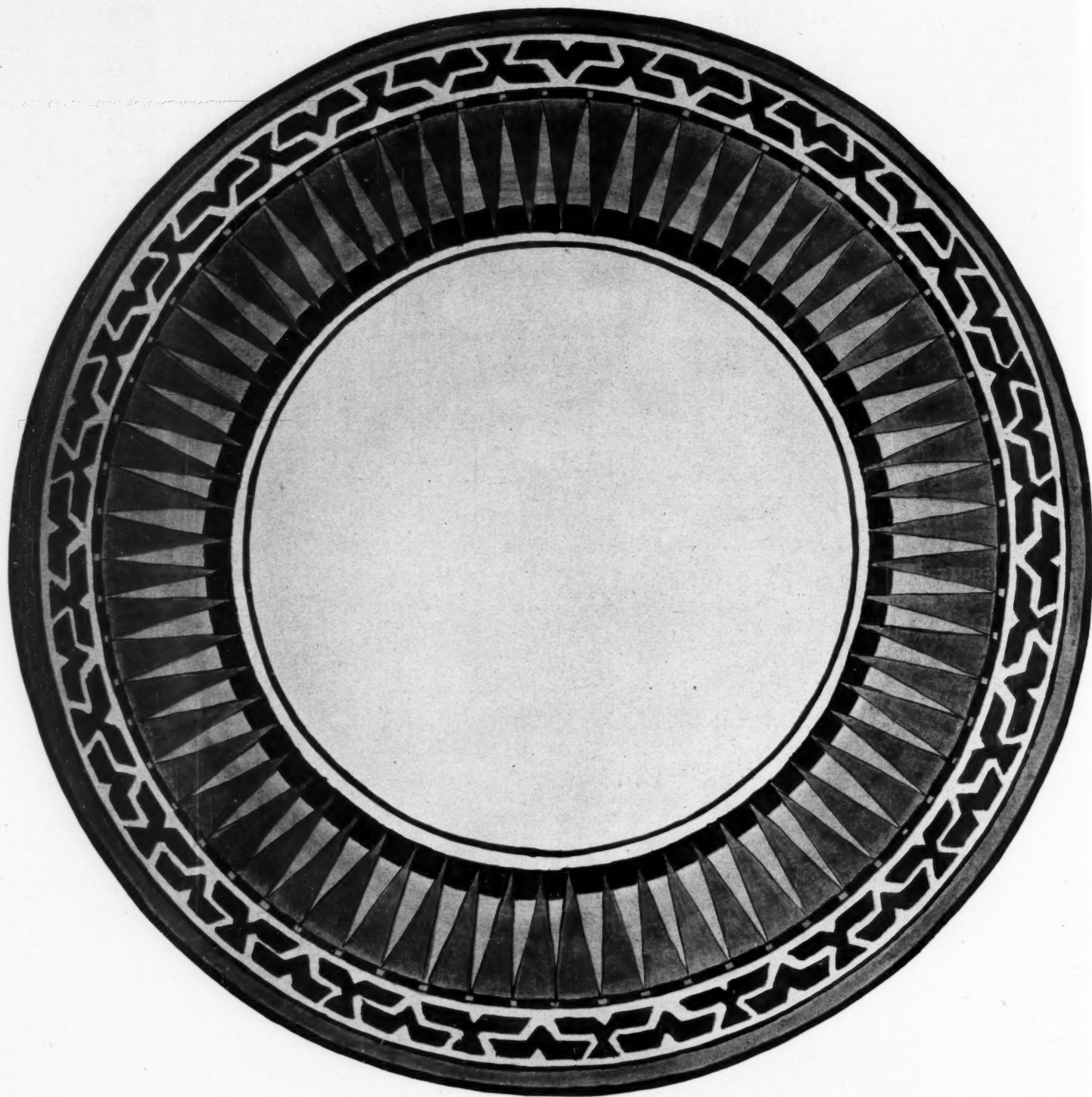
Lay in background in the second fire, using Ivory Yellow above the berries and leaves in a smooth tint, and Shading and Brown Green, equal parts, below.

An extra fire will improve the dark green tint and the powder color may be dusted on in the last fire.



WILD STRAWBERRY DESIGN FOR JELLY JAR—JEANNE M. STEWART

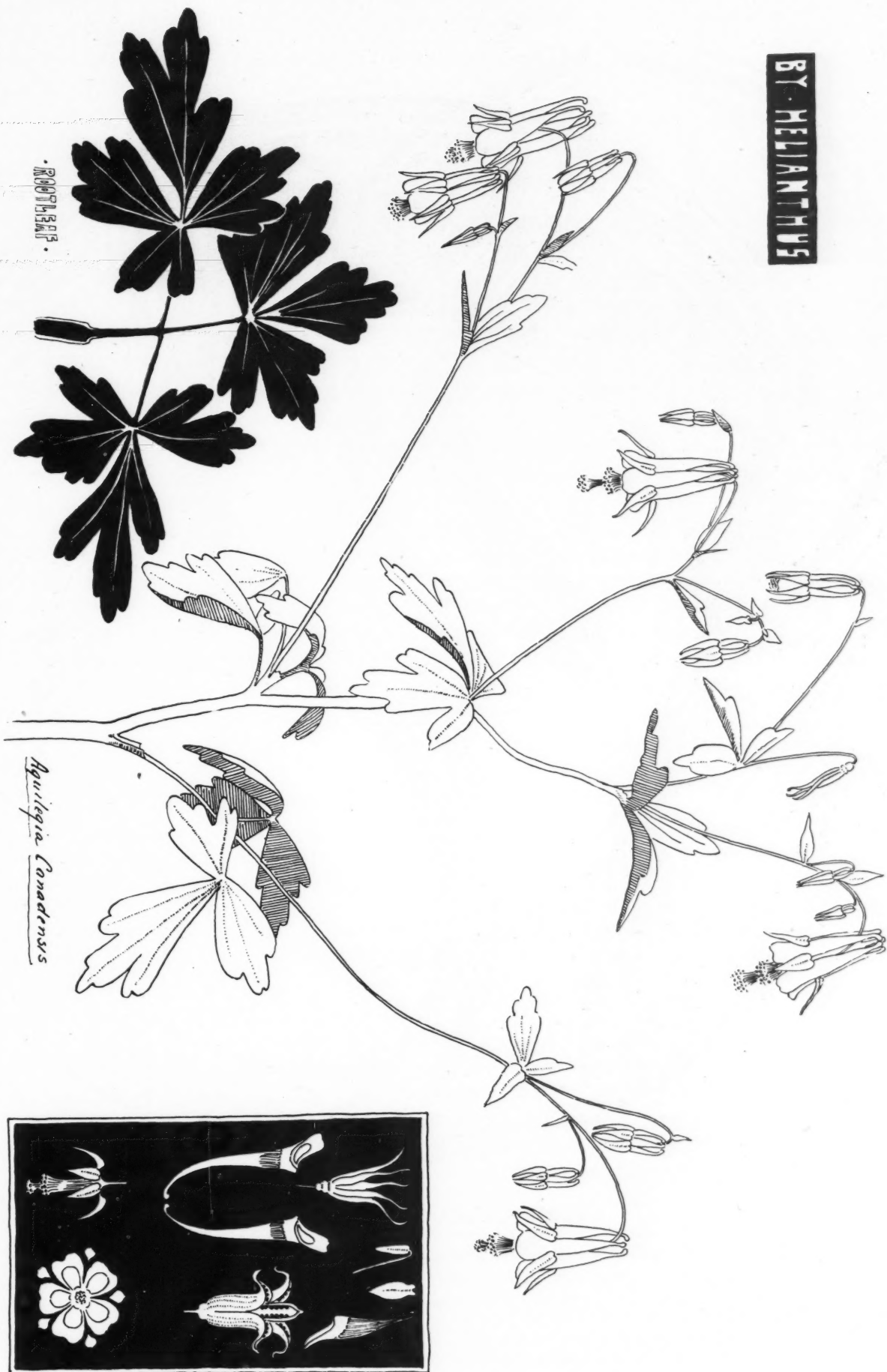
J. M. STEWART



DESIGN FOR PLATE—MARGARET OVERBECK

To be executed in gold and red and yellow brown with black or red outlines.

BY HELIANTHUS

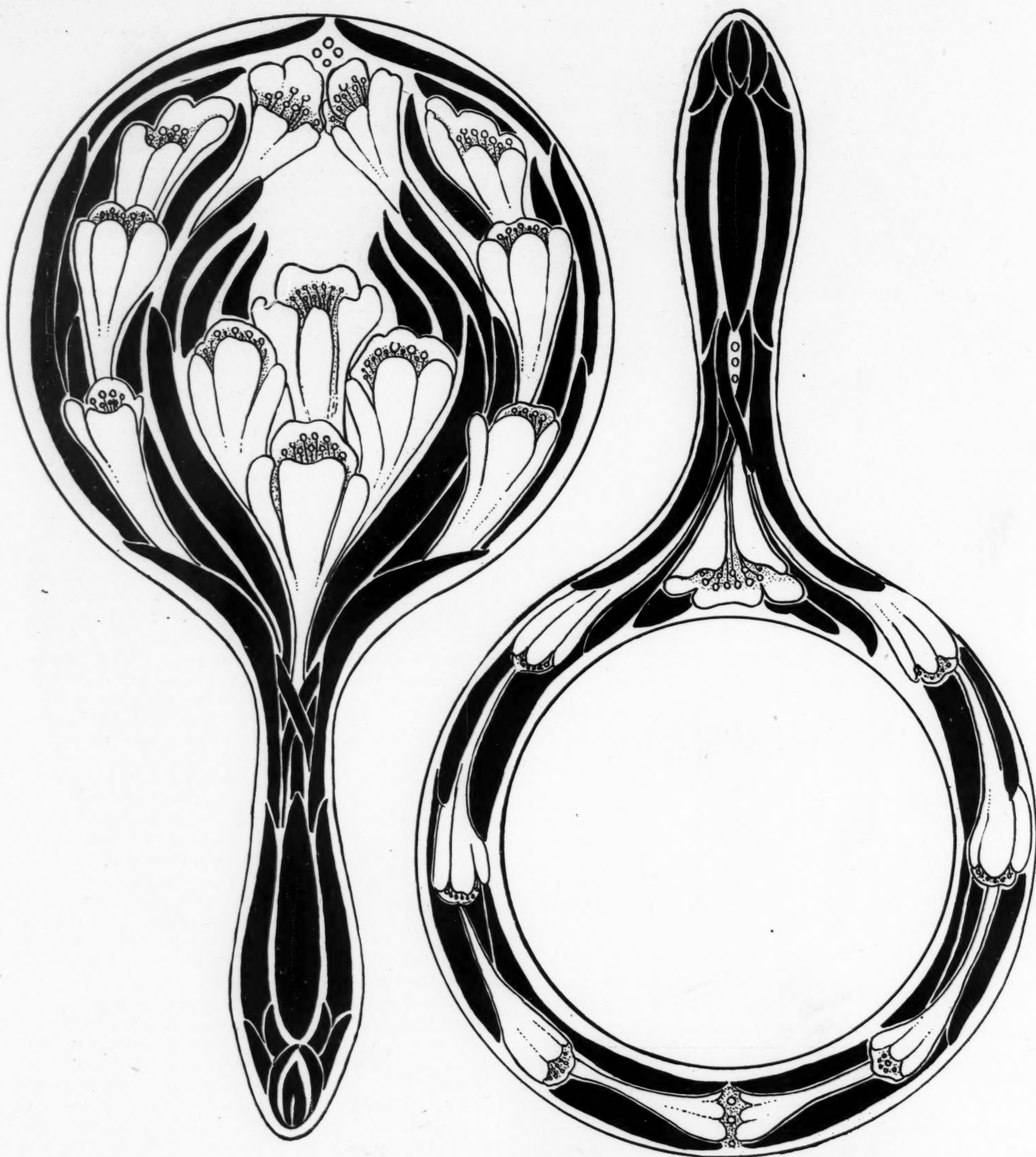


• ROOTHAF •

COLUMBINE—EDITH ALMA ROSS

Aquilegia Canadensis

Flowers bright scarlet with yellow rims to cornucopias, leaves green.



DESIGN FOR HAND MIRROR—LUCIA A. SOULE

Flowers ivory or yellow lustre on yellow brown lustre ground, leaves gold outlined with Meissen Brown or leaves Meissen Brown, outlines and Stamens Gold.

THE CRAFTS

WOOD CARVING AND PYROGRAPHY. LEATHER AND METAL. BASKETRY, ETC.

Under the management of Miss Emily Peacock, 6 Brevoort Place, Brooklyn, N. Y. All inquiries in regard to the various Crafts are to be sent to the above address, but will be answered in the magazine under this head.

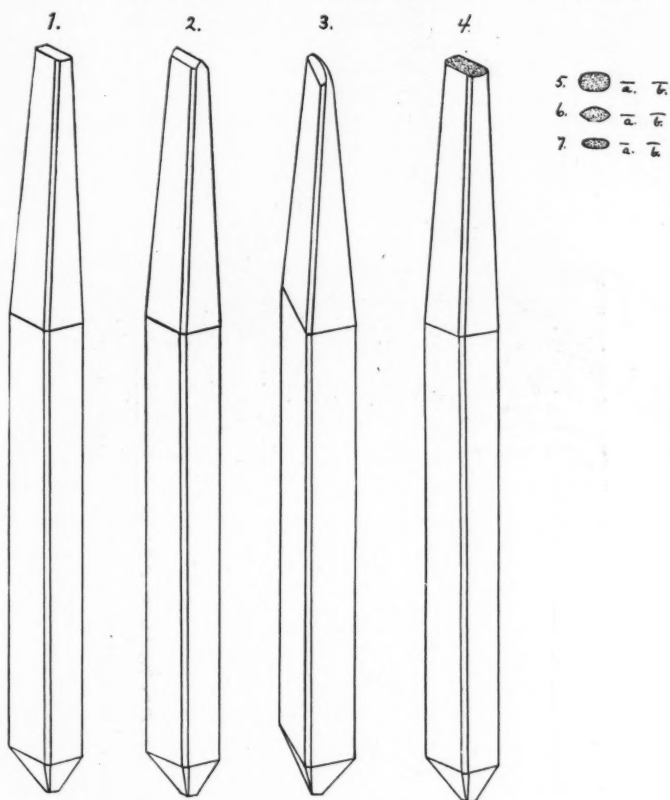
HOW CHASING TOOLS ARE MADE

Edith Vail

THE making of steel tools is not a difficult process if each step is accurately and carefully done. Chasing tools for metal work are made from square bars of annealed tool steel of varying dimensions, from $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{16}$ down to $\frac{1}{8}$ of an inch in width according to the purpose of the tool.

We begin by placing the long steel bar on an anvil and with a chisel and hammer cut off pieces the required length for each tool, which is about $4\frac{1}{2}$ inches. If annealed steel cannot be obtained, ordinary bar steel may be used as it is a simple matter to anneal it, since annealing, or softening of metals, consists in heating the metal red hot and allowing it to cool slowly.

Now place one of the pieces lengthwise in a large vice with about two inches of the bar slanting upward so that it will just



escape being even with the jaws of the vice, that in the process of filing the file will not be injured on the hard steel of the vice. To avoid undue noise in filing, the piece of steel must be kept as close as possible to the jaws of the vice and not allowed to project beyond the ends of the vice.

We wish to shape the bar down as nearly as possible like Fig. 1 which is called a blank. A blank is the general shape of all chasing tools, before the special shaped end of the tool to be used on the metal is made. With a large flat cross-cut file about 14 inches long by $1\frac{1}{2}$ inches wide, proceed to file an even slant from about $1\frac{1}{2}$ inches from the end of the tool to the middle of that end. Turn the tool in the vice to the opposite side and repeat the same, being careful to leave the end about $\frac{3}{8}$ of an inch in thickness which allows for the forming of the special face to be made on the end of the tool. The other two sides are filed in a similar manner except that they are not

slanted to such a degree, only about $\frac{1}{4}$ of an inch being taken off from the end of the tool. Turn the tool in the vice to the opposite end and file this cone-shaped, leaving a small flat surface on top for the hammer to strike upon. Bevel off the four edges of the tool the entire length. We now have a blank in the rough. With a medium sized flat cross-cut file, which will be about 8 inches long and $\frac{3}{8}$ wide, file over the entire filed surface to remove the deep scratches made by the large file, but do not change the shape of the tool. Repeat the same process with a very fine flat cross-cut file to remove the scratches left by the medium sized file, and with this file slightly round off the four bevels from the face of the special shaped end of the tool back about half an inch. Now proceed to finish off the special end only, by rubbing the entire surface of the four slanted sides on coarse, medium and fine emery paper until a polished surface is obtained and no scratches are visible. This process is made easier by placing the tool in a hand-vice rather than holding it in the hand. We now have a finished blank (Fig. 1).

The first tool necessary for chasing is a straight tracer (Fig. 2) used on all straight lines in outlining a design on metal. This tool is made by taking a finished blank and with the finest file bevel the long edges of the face of the tool about $\frac{1}{2}$ of an inch wide and so that the two bevels *almost* meet at the center as in Fig. 2. Polish off the bevel with fine emery cloth, also slightly round off the edge where the two bevels meet, it is also well to slightly rub over the ends so there will be no crude edges or corners to catch in the metal.

The tool is now ready to be hardened. This is done by heating about an inch of the special shaped end of the tool, not simply red hot but to an orange red and plunging it instantly into a vessel of cold water. The tool must be plunged vertically into the water, hot end first and at same time rotated in a circular manner. If plunged slantingly into the water the tool will cool more rapidly on the side which touches the water first and hence will very probably be bent out of shape. If heated beyond an orange red to a yellowish color the tool will be burned, making it too brittle and marked with small spots. If not heated enough the tool will not become hard. Remove the tool from the water and with a piece of fine emery paper rub off the blackness produced by heating. The proper hardness of the metal may be tested by passing the edge of a file across the tool near the end. If it leaves no scratches the tool is hard, but if scratches are easily made the tool should be hardened again.

The last process is to temper the tool. After the hardening process the tool is left very hard and somewhat brittle and with hard usage liable to crack. By tempering the tool the steel is rendered more or less elastic without losing its hard qualities. Tempering is done by holding the middle of the tool in a Bunsen flame, watching carefully until a steel blue color appears on the tool near the flame; simultaneously next to the blue appears a rich brown color which fades out to a faint straw color. The three colors will be seen to gradually creep toward the end of the tool and the instant the faintest straw color reaches the end it must be plunged into cold water to stop the process. If the brown color is allowed to reach the end of the tool, the tool is more than likely to be too soft to use. If the blue color reaches the end we know it is too soft. Test the hardness with the file as before.

The next tool to be made is the curved tracer (Fig. 3), used for the same purpose as the straight tracer only on curved lines. To make this tool take a finished blank exactly like the one used for the straight tracer. Instead of having the face of this tool flat as in Fig. 1, curve it slightly by filing lengthwise across the face. Bevel off one of the long edges of the face of the tool, allowing the bevel to nearly reach the center. On the opposite side (not face) of the tool from this, file the flat side so that it curves around and meets the flat side (with the straight bevel across the face). Now across the long edge of the face, on the curved side of the tool, file a bevel similar to the bevel on the straight side, only curve it around the ends of the face until it almost meets the ends of the straight bevel. Finish, harden and temper with the same process as before.

Fig. 4 is called a planishing tool and is made in the same manner as the above tools, the finishing and shape of the face of the tool being the only exceptions. The face is made the size of the illustration and left flat and matted, which is done after the tool is polished, by striking the face with the medium sized file and at the same time rotating it in the hand to avoid striking twice in the same place. This process is repeated until an even rough texture is obtained. The rough surface is to keep the tool from slipping on the metal. The tool is now ready to be hardened and tempered. The tool is used for setting down the metal on the back side which produces the raised parts of the design on the right side.

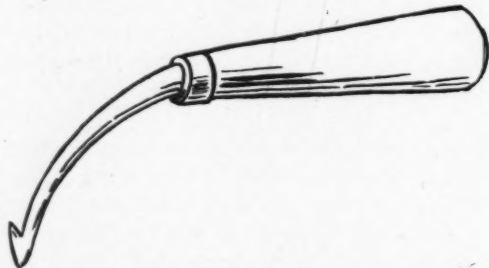
Tools of this character are made in hundreds of shapes and sizes according to the requirements of each design—a few are shown in Figs. 5, 6, 7.

All chasing tools are made according to the above directions; if they are carefully followed one should have no difficulty in making any shaped tool required.

A MODERN HAND MADE RUG

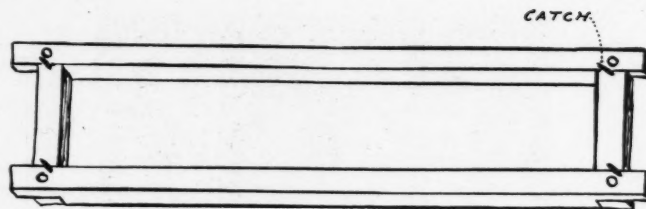
Amy Mali Hicks

IT is an interesting feature of the present Arts and Crafts movement, that sundry industries, which flourished in the days of our grandmothers, are being revived through its influence, and adapted to the conditions of modern craftsmanship. Among them none has lent itself more successfully to the rejuvenating process than the "hooked rug". In its present guise it quite justifies the popularity it enjoys, and can in appearance and bearing quality well compete with other modern rugs.

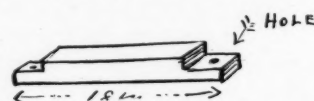
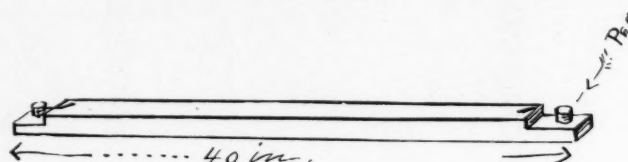


No. 1—THE RUG HOOK.

Yet it is made by a process so simple that it can be easily mastered by even an unskilled workman. As the name implies, the principal implement is the hook (shown in illustration No. 1). This can be readily made by any blacksmith or tool-maker from a twopenny steel nail, and afterwards set in a tool handle. The only other implement used is the frame (shown in illus. No. 2) with its several parts in illus. No. 3. It is made of



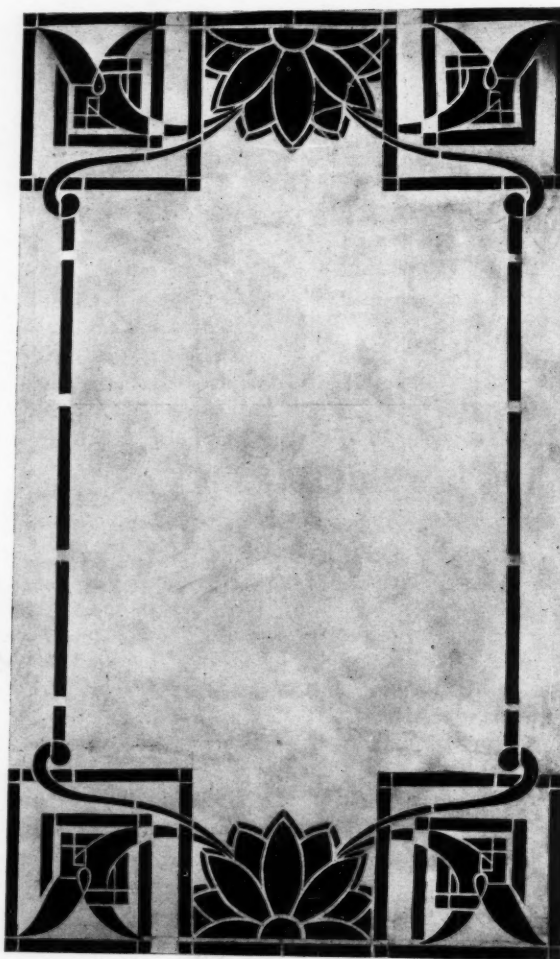
No. 2—THE FRAME



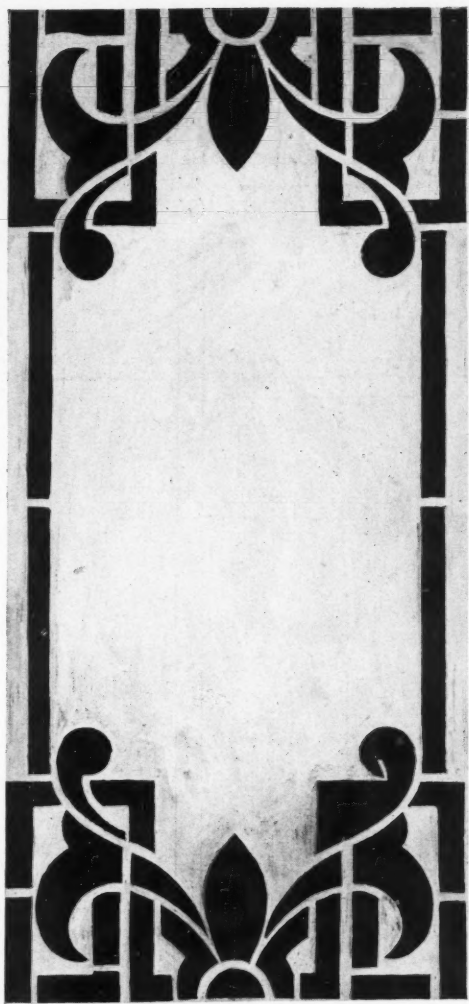
No. 3—PARTS OF THE FRAME.

four strips of pine about two inches in thickness, the longer or side pieces being forty inches, the shorter or end pieces eighteen inches. These are fitted together so that the pegs in the ends of the longer pieces fall in the holes in the ends of the shorter pieces. For greater steadiness are added little iron catches, which turning on screws hold the pieces snugly in their places.

Almost as simple as the tools, are the materials used in



No. 4—THE TEA CHEST PATTERN. Designed by AMY MALI HICKS.



No. 5—FRET AND SCROLL PATTERN. Designed by AMY MALI HICKS.

making the hooked rug. Though old cloth may be employed with good effect, the base of supplies is no longer centered in the rag-bag filled with the cast off garments of the family. For the best results and in order to secure uniformity of texture in the finished product, the material to use is a fairly good quality of unbleached flannel, which sells at wholesale for about twenty-five cents a yard, coming in pieces of sixty yards or so. The other material needed is what is known commercially as "raw jute," or burlaps, and which forms the foundation for the rug, while from the flannel the loops are made which cover its surface.

The preferred way to prepare the flannel for use, is to dye it oneself, matching as nearly as possible a color scheme which has first been worked out on paper. Artificial dye products from coal tar or anthracite may be used for this purpose and by being judiciously handled may have their original crudeness modified. The ideal way, of course, is to use only natural dye products, to make one's dye oneself, and then have the satisfaction of knowing exactly their origin, and that they are made of reliable chemicals and dye stuffs.

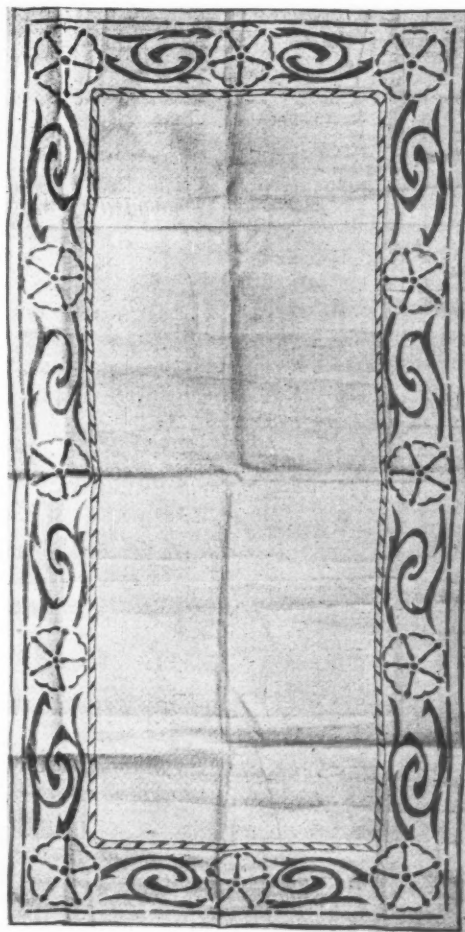
This latter method, however, involves a knowledge of chemistry, much skill and patience, and as all legitimate wool dyeing is based on the indigo fermentation vat, also much more time, experience and space than is at the disposal of the average rug worker.

Of course it is possible to make use of old materials, which are already colored, and which having undergone the softening

process of age and wear, possess unusually attractive tones. These same tones however are almost impossible to match, and I have hardly ever seen an instance where one started with something already on hand, that it did not give out before the rug was finished. Then as a final and last resource, one begins an indefinite and harassing "matching off" of color, which is never quite satisfactory in the end. The really practical way is to be sure to dye enough of the color needed, and if there is any left over it can easily be dyed a darker shade, or perhaps black, of which one always needs a supply on hand for outlining the rug pattern.

As to the pattern itself, it should be simple and structural in character, for the thread or strip of flannel from which the rug is worked, is too coarse to admit of much detail in treatment. Large masses of color of comparatively the same tone value are most effective. These color masses are immensely improved, and much beauty added to the tone of the rug if the flannel is not too evenly dyed, as the little irregularities in the color, create a certain variety in the tone which helps the general effect.

The design should be drawn the full size of the rug on stencil paper, then the stencil, (illus. Nos. 4 and 5) which is used for stamping the pattern on the burlaps or rug foundation, is cut and shellaced. After it is thoroughly dry it is pinned in the burlaps which is cut about three inches larger than the design on all four sides. Then take ordinary bottle blueing or liquid indigo, and brush over the holes of the stencil so that the design falls over the burlaps underneath. The printed pattern (shown in illus. No. 6) is then stretched upon the rug



No. 6—HEARTH RUG WITH PERSIAN ROSE MOTIF BORDER. Designed by AMY MALI HICKS.

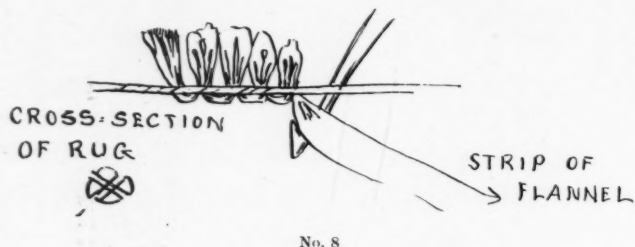
frame in the following manner: Take the frame apart and tack the ends of the burlaps pattern to the longer pieces of the frame, then roll the pattern around one of the bars until just the size of the frame, then put the frame together as shown in illus. No. 7. The burlaps should be stretched as tightly as possible.



No. 7—FRAME WITH RUG PATTERN MOUNTED.

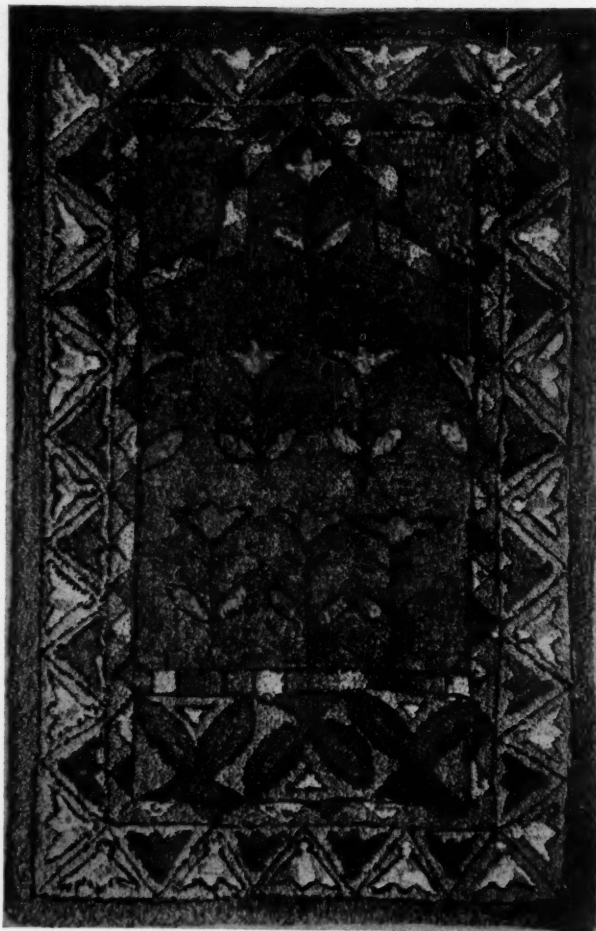
The rug is now ready for "hooking." The flannel has already been prepared by tearing it into yard lengths, folding into four thicknesses and cutting it into strips lengthwise of the selvage and one-quarter of an inch wide. Hold the strip of flannel underneath the rug pattern with the left hand, take the rug hook in the right hand and push the hook through the burlaps as shown in illus. No. 8. Catching the strip on the other side draw it through, making loop after loop on the upper surface of the rug foundation. Always begin by outlining the design as it gives one a clearer idea of the pattern, and draw up the outline somewhat higher than the level of the other loops and somewhat more evenly. The general height of the loops should average about one fourth of an inch, and in order to secure an interesting texture, it is wise to make about one in three somewhat lower. Leave from two to three meshes of the burlaps between the holes made by the hook, in order that the loops may not be too near together.

When filling in the frameful, be sure to work from the outside toward the center, as otherwise the edges of the rug are apt to be stretched. After the frameful is filled, it is ready to clip, which should be done before the rug is turned. In clipping the rug put the left hand underneath and raise the surface slightly, clipping with large shears the raised surface. It is not necessary to clip each individual loop, just about one in three makes the rug stronger and more durable. The sur-



No. 8

face of the rug can be made uniform after it is taken out of the frame altogether by going over it and evening up any little irregularities in texture. There can be no question that the finished rug is a durable and serviceable article and a perfectly professional looking piece of craftsmanship. Indeed it seems a far cry from the rug which gave the inspiration, to the finished one shown here. The former came from Prince Edwards Island, Canada, and was indeed a curious product. Though seemingly full of hopeless crudities it embodied a simple technique and has shown itself susceptible to aesthetic influences by becoming the basis of a new and interesting branch of craftsmanship.



No. 9—THE FINISHED RUG. Designed by A. M. HICKS. Worked by M. PACKER, SCHOOL OF INDUSTRIAL ARTS, TRENTON, N. J.

TREATMENT FOR LEATHER LETTER CASE

Emily F. Peacock

USE a rich brown Russian calfskin. Make the back and two sides in one piece, and leave a good margin outside the design. Dampen the leather with a wet sponge on the back and put on a piece of stone or marble. Go over all the lines with a dull outlining tool, making them strong and firm. With a small flat tool rub down the background firmly always making the strokes follow the shape to be set down, and following each other closely. When this has been done once dampen the leather again and repeat the process until glossy and very smooth.

Put down the centers of the flowers and leave the dark part of the case perfectly plain. Use the same treatment in the partition, leaving the lower part plain.

The case should be made up over heavy Bristol board and lined with thin leather.

A BLOTTING PAD IN METAL

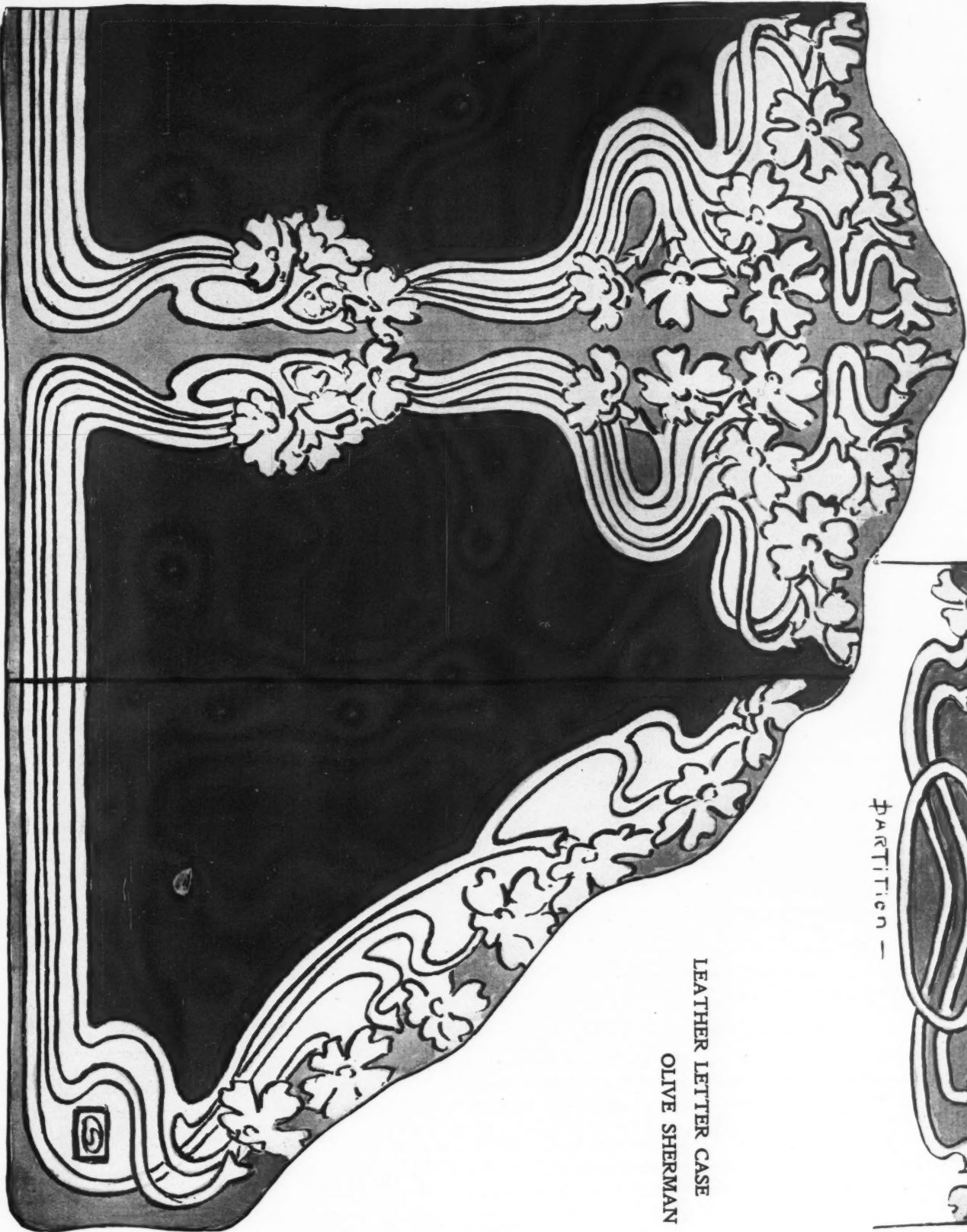
Emily F. Peacock

USE copper or brass about gauge 24. Cut each piece large enough to allow $\frac{1}{4}$ of an inch margin all around the design. Trace the design on the back of the metal and put on cement as described in the June number, page 49. Go over all the lines with a broad outlining tool, taking care that the path-



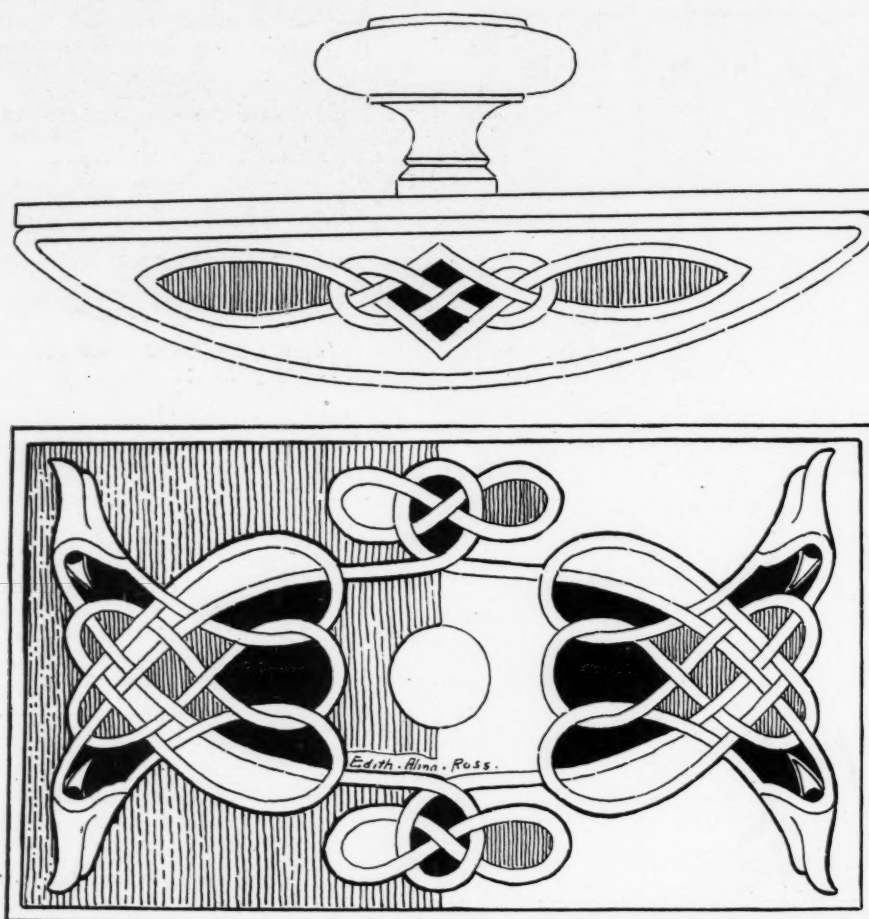
Partition -

LEATHER LETTER CASE
OLIVE SHERMAN



BACK -

SIDE -



BLOTTING PAD FOR PYROGRAPHY OR METAL—EDITH ALMA ROSS

ways go over and under in the right way. Repousse slightly between the lines with a larger tool, not trying to get high relief but a nicely rounded surface. Take the metal off the cement and put back again working now on the right side. Set down the metal in the background along the outer lines, also along the inner lines of the light spaces in design. Excepting the heads in the four corners both dark and light spaces here should be repoussed, setting down the white spaces in the eyes. Use the larger tool for this work also, excepting in the smaller spaces where a smaller tool of the same design is necessary. Cut out the 14 black spaces left with a saw, also the circle in the center where the handle is screwed on. File all the edges very smoothly and mitre the corners. Bend over the margin on the anvil with a rawhide hammer. Put the metal on the wooden frame and with a burnisher or with a piece of hard wood turn it smoothly over the lower edge. To fasten more securely and finish the design, put a small round headed nail in each of the eyes. If copper is used a dark wooden frame would be better; if brass, a lighter wood stained a dull green would be effective, showing the color where the metal is cut out and on the handle. The handle may be decorated with a small disk of metal, or left plain. Treat the side pieces in exactly the same way, turning the margin over the frame with a burnisher and fastening with a few small tacks along the edge. When both pieces are finished cover the pad part with two thicknesses of blotting paper. Turn the edges over the ends and fasten with small tacks. Put the top on and screw in the handle.

ANSWERS TO CORRESPONDENTS.

J. W. H.—Fat oil of turpentine and Dresden thick oil of turpentine are very nearly the same preparation and are both used in tinting, in mixing powder colors and gold.

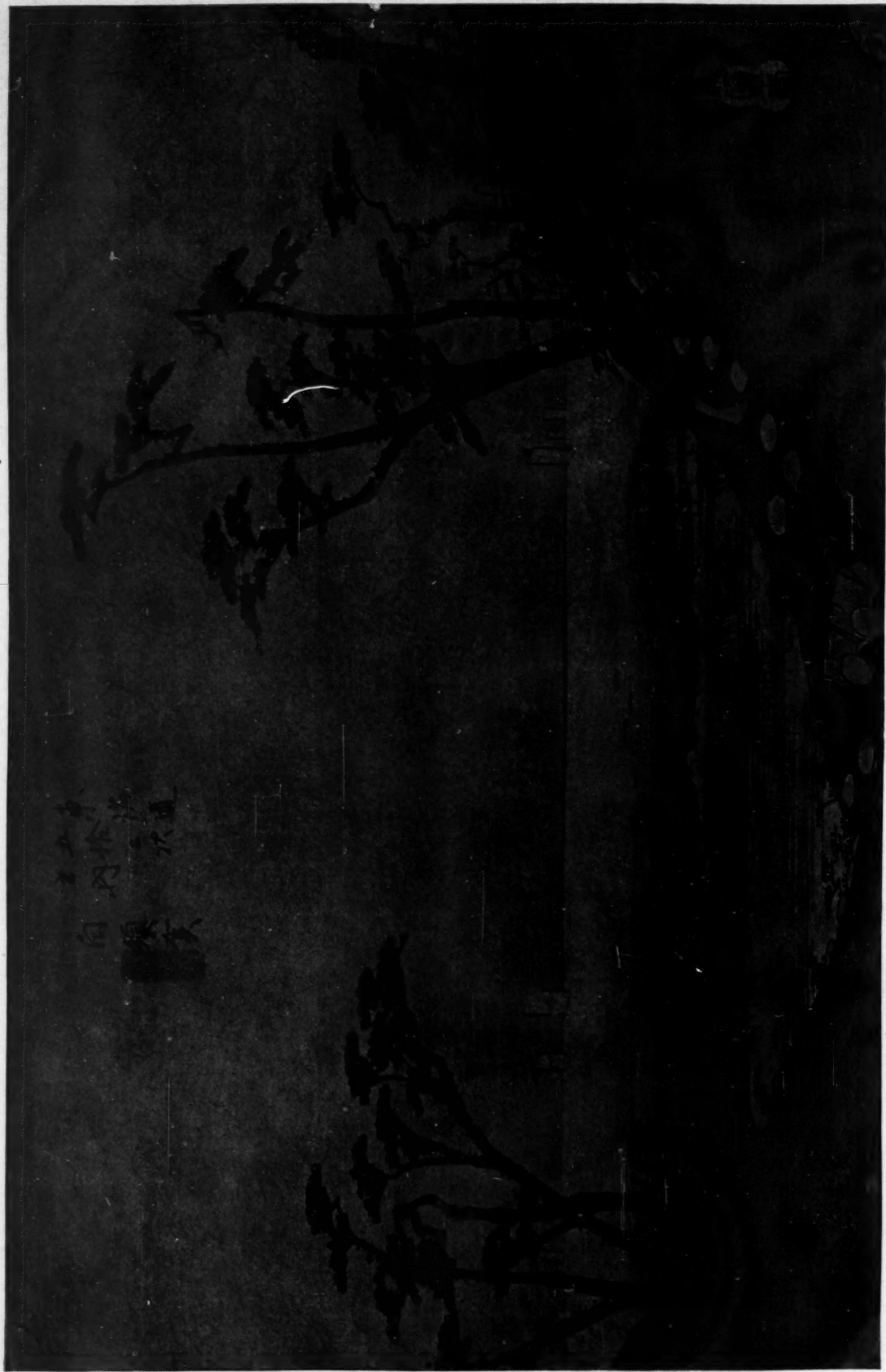
English china is very difficult to fire—we would not advise amateurs to use it. It is too soft even for our overglaze kilns, needs a special stacking and firing.

E. F. Y.—We have in preparation a number of small studies of different colored grapes, to be used as supplement in the spring. A full description of the method of painting will be given with them, we regret that we will be unable to give the treatment before.

G.—The style of lustre work to which you refer is rapidly going out—rococo scrolls are rarely seen in any kind of china decoration now. The color effect is first worked out and fired—yellow over rose, dark green over ruby, green over purple, etc., combined with some plain lustre, such as green or ruby. Then the scrolls are sketched on free hand in gold or a darker lustre and when dry touched up with black, it has been found a convenient way to conceal defects in the lustre but is very bad art.

Mrs. S. V. W.—The soft enamel needs a light fire but the Aufsetzweis white or tinted with color will always stand the hottest place in the kiln. We will give a good color study of poppies as soon as we can get one.

Mrs. W. A. O.—The materials for glass decoration should be especially prepared for glass and can be obtained from wholesale dealers in art materials anywhere. We can not answer your inquiry in regard to salary and wages paid to workers in a factory, that is out of our line—we deal only with individual workers, so have no information on the subject. In regard to building a kiln for glass you had better write to some of our kiln advertisers, they will have all necessary information. We have no designs especially for glass though many of our designs might be adapted to that material.



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SUPPLEMENT TO
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LANDSCAPE—HIROSHIGI

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